

REMARKS/ARGUMENTS

Claims 9, 16 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan et al. (Hereinafter "Colgan1" US 6,483,498) in view of Furuhashi et al. (Hereinafter "Furuhashi" US 2002/0000979 A1). Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Furuhashi, as applied to claims 1 and 12, and further in view of Colgan et al. (Hereinafter "Colgan2" US 6,117,918 B1). Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Furuhashi, as applied to claims 1 and 12 above, and further in view of Hinata (U.S. 6,369,865 B2). Claims 13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Mai (US 2004/0141096 A1) and further in view of Furuhashi. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Mai and Furuhashi, as applied to claim 13 above, and further in view of Colgan2. Claims 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Ikeda et al. (Hereinafter "Ikeda" US 6,504,584) and further in view of Boyd.

1. Rejection of claims 9, 16 and 24 under 35 U.S.C. 112:

Claim 9 recites "the protrusion" in line 2. Claims 1 and 8 both recite "at least one protrusion" in lines 7 and 3 respectively. For the purpose of art rejection, "the protrusion" will be construed as any one of at least one of protrusions of claims 1 and 8.

Claims 16 and 24 are rejected for the same reason above.

Response:

Claims 9, 16 and 24 are have been amended to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Just as Examiner considered in the Office Action, the items of "the protrusion" recited in

claims 9, 16 and 24 refer to “the protrusion of the first substrate” shown in claims 8, 15 and 23. Therefore, the limitation of “the protrusion of the first substrate includes a plurality of signal connecting contacts” is added to claims 9, 16 and 24, and can be supported by the original claims 9, 16 and 24, paragraphs [0017], [0019], [0022] of the specification and the drawings FIG. 4-FIG. 5. No new material has been introduced.
5 Acceptance of the amended claims 9, 16 and 24 is respectfully requested.

2. Rejection of claims 1 and 12 under 35 U.S.C. 103(a):

Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over
10 Colgan1 in view of Furuhashi for reasons of record, as recited on pages 4-6 of the above-indicated Office action.

Response:

At the outset, applicants reverent appreciate for Examiner’s regarding
15 allowability of the claims formerly. Since a new reference is now recited, and is regarded as a relative prior art, applicants would like to present the differences between the claims of this application and the recited references, and a Notice of Allowance is respectfully expected in consideration to the patentably distinct differences.

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First, applicants politely remind Examiner that the second substrate 404 having a touch-detecting circuit 416 and a color filter 408 formed on the touch-detecting circuit, as described in claim 1 and paragraph [0015] of the present application. In other words, the present invention is to integrate the touch-detecting circuit 416 into a CF
25 substrate 404. Also shown in claim 1 and paragraph [0017] of the present application, the protrusion of the CF substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals to controlling or detecting circuit outside. As shown in claim 1, the signal
30 connecting contacts of the present application are connected to the detecting circuit for

transmitting pixel controlling signals and touch-detecting signals. As a result, the second substrate of the present application further has the integral protrusion jutting out the first substrate, and has the signal connecting contacts disposed on the protrusion of the second substrate.

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On the contrary, Colgan1 or Furuhashi dose not teach or suggest such an upper substrate and such signal connecting contacts. The differences are described as following:

10 Although Examiner points that “*Furuhashi teaches a touch panel provided in a screen input type display unit wherein the unit comprises an upper substrate is integrated with a protrusion*” in page 5 of the above-indicated Office action, the touch panel 100 and the liquid crystal display unit 300 are individual devices attached together according to paragraph [0099] and Figs. 1-2 of Furuhashi’s disclosure, and
15 the protuberating output printed board 12 is an additionally attached structure as shown in Figs. 2-4 and 6-8. Please refer to paragraph [0099] of Furuhashi’s disclosure, *the illuminator 200 is mounted on the display surface of the liquid crystal display unit 300, and the touch panel 100 is laminated on the illuminator 200.* In other words, Furuhashi does not teach an in-cell type touch-detecting display panel, which
20 integrates the touch-detecting circuit into a CF substrate. Therefore, although Furuhashi’s output printed board 12 can protuberate from the lower substrate 2 of the touch panel 100, Furuhashi does not teach an integral protrusion of the CF substrate. Furthermore, applicants politely remind Examiner that the second substrate and the protrusion are integral in claim 1. That means the second substrate and the protrusion
25 are actually one piece without any fracture there between. However, the output printed board 12 is an additionally attached structure in Fig. 7, not an integral part of the upper substrate 1, and not even a part of the CF substrate.

30 Since the upper substrate 1 of Furuhashi’s disclosure is obviously not the CF substrate having a touch-detecting circuit and a color filter taught in the present

application, applicants believe that **it is not obvious to a person having ordinary skill in the art to consider the upper substrate 1 of Furuhashi's disclosure as the CF substrate of the present application, and politely apply a reconsideration of such an incorporation.**

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On the other hand, as shown in the drawings of Colgan1's disclosure, *the color filter plate 18* taught by **Colgan1** does not *have a protrusion jutting out the TFT array plate 8*. Therefore, the signal connections are still problems for Colgan1, and there is obvious no protrusions of the upper substrate 18 to installation of signal connecting contacts in Colgan1's disclosure.

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Applicants appreciate the thorough examination made by Examiner. However, applicants also politely submit that the claimed input-sensor-integrated liquid crystal display panel including the concrete structure and the signal connecting means is non-obvious in consideration of the recited references. The signal connecting contacts, which are disposed on the CF substrate and connected to the detecting circuit, are especially included for such an input-sensor-integrated liquid crystal display panel to transmitting pixel controlling signals and touch-detecting signals on the second substrate. Furthermore, the CF substrate including the touch-detecting circuit, the color filter, the signal connecting contacts and the protrusion are not taught by the recited references. Therefore, applicants politely apply a reconsideration of the claim rejections under 35 U.S.C. 103(a).

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Neither Colgan1 nor Furuhashi teach such an input-sensor-integrated liquid crystal display panel, so claim 1 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of claim 1 is respectfully requested. Since claim 12 is dependent upon claim 1, it should be allowable if claim 1 is allowable. Reconsideration of claim 12 is respectfully requested.

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3. Rejection of claim 6 under 35 U.S.C. 103(a):

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Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Furuhashi, and further in view of Colgan2 for reasons of record, as recited on pages 6-7 of the above-indicated Office action.

5 **Response:**

Claim 1 has the limitation of “the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting
10 circuit for transmitting a plurality of pixel controlling signals and a plurality of touch-detecting signals”.

As the above mentioned, Colgan1 and Furuhashi do not teach that the claimed CF substrate includes the claimed touch-detecting circuit, the claimed color filter, the
15 claimed signal connecting contacts and the claimed protrusion.

Further referring to Colgan2, Colgan2 does not teach that

- (1) the top substrate 24 has at least one protrusion jutting out the bottom substrate 22; and
20 (2) the top substrate 24 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 24.

Therefore, the combination of Colgan1’s disclosure, Furuhashi’s disclosure and Colgan2’s disclosure does not teach all the limitations disclosed in claim 1. Thus,
25 claim 1 should be allowable in consideration of 35 U.S.C. 103(a). Since claim 6 is dependent upon claim 1, it should be allowable if claim 1 is allowable.
Reconsideration of claim 6 is respectfully requested.

4. Rejection of claims 8 and 9 under 35 U.S.C. 103(a):

30 Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Colgan1 in view of Furuhashi, and further in view of Hinata for reasons of record, as recited on pages 7-8 of the above-indicated Office action.

Response:

5 Claim 1 has the limitation of “the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of
10 touch-detecting signals”.

As the above mentioned, Colgan1 and Furuhashi do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion.

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Further referring to Hinata, Hinata does not teach that

(1) the top substrate 8a has at least one protrusion jutting out the bottom substrate 8b;

(2) the top substrate 24 has a plurality of signal connecting contacts disposed on
20 the protrusion of the second substrate 24; and

(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

25 Although the bottom substrate 8b has at least one protrusion jutting out the top substrate 8a in Hinata’s disclosure, there is no protrusion of the top substrate 8a jutting out the bottom substrate 8b. The top substrate 8a and the bottom substrate 8b, which have different structures and different purposes, are completely different from each other, and should not be considered as the same. The protrusion of the second
30 substrate is especially included in the present application for such an

input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

5 The structure of the second substrate, the position of the signal connecting contacts, and the functions of the signal connecting contacts are not merely a meaningless design, the claimed structure is especially designed for integrating a touch-controlling circuit into liquid crystal display panel. However, all the recited references do not teach the claimed input-sensor-integrated liquid crystal display panel
10 having the protruded second substrate for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals.

 The combination of Colgan1's disclosure, Furuhashi's disclosure and Hinata's disclosure does not teach all the limitations disclosed in claim 1. Thus, claim 1 should
15 be allowable in consideration of 35 U.S.C. 103(a). Since claims 8 and 9 are dependent upon claim 1, they should be allowable if claim 1 is allowable. Reconsideration of claims 8 and 9 is respectfully requested.

5. Rejection of claims 13 and 15-19 under 35 U.S.C. 103(a):

20 Claims 13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Mai and further in view of Furuhashi for reasons of record, as recited on pages 9-12 of the above-indicated Office action.

Response:

25 Claim 13 has the limitation of "a second substrate having a touch-detecting circuit and a color filter...the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting circuit for
30 transmitting a plurality of pixel controlling signals and a plurality of touch-detecting

signals". As shown in paragraph [0019] and Fig. 6 of the present application, the detecting layer 316 and the color filter 308 is fabricated on the two opposite sides of the top substrate 304 to make the top substrate 304 have functions of displaying images and detecting signals.

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As the above mentioned, Colgan1 and Furuhashi do not teach that the claimed CF substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion. The touch panel 100 and the liquid crystal display unit 300 are individual devices attached together according to paragraph [0099] and Figs. 1-2 of Furuhashi's disclosure, and the protuberating output printed board 12 is an additionally attached structure as shown in Figs. 2-4 and 6-8. In other words, Furuhashi does not teach an in-cell type touch-detecting display panel, which integrates the touch-detecting circuit into a CF substrate, and Furuhashi does not teach an integral protrusion of the CF substrate.

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The protrusion of the second substrate is especially included in the present application for such an **input-sensor-integrated** liquid crystal display panel and for installing **signal connecting contacts** to transmit pixel controlling signals and **touch-detecting signals**, as described in claim 13.

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Since the upper substrate 1 of Furuhashi's disclosure is obviously not the CF substrate having a touch-detecting circuit and a color filter taught in the present application, applicants believe that it is not obvious to a person having ordinary skill in the art to consider the upper substrate 1 of Furuhashi's disclosure as the CF substrate of the present application.

25

On the other hand, as shown in the drawings of Colgan1's disclosure, **the color filter plate 18** taught by **Colgan1** does not have a protrusion *jutting out the TFT array plate 8*. Therefore, the signal connections are still problems for Colgan1, and there is obvious no protrusions of the upper substrate 18 to installation of signal connecting

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contacts in Colgan1's disclosure.

Further referring to Mai, Mai does not teach that

5 (1) the upper substrate 132 has at least one protrusion jutting out the lower substrate 118;

(2) the top substrate 132 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 132; and

10 (3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

The combination of Colgan1's disclosure, Mai's disclosure and Furuhashi's disclosure does not disclose all the limitations of the structure in claim 13. Therefore, claim 13 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of
15 claim 13 is respectfully requested.

Since claims 15-19 are dependent upon claim 13, they should be allowable if claim 13 is allowable. Reconsideration of claims 15-19 is respectfully requested.

20 **6. Rejection of claim 14 under 35 U.S.C. 103(a):**

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colgan1 in view of Mai and Furuhashi, and further in view of Colgan2 for reasons of record, as recited on page 12 of the above-indicated Office action.

25 **Response:**

Claim 13 has the limitation of "the second substrate further having at least one protrusion jutting out the first substrate and a plurality of signal connecting contacts disposed on the protrusion of the second substrate, the second substrate and the protrusion being integral, the signal connecting contacts connecting to the detecting
30 circuit for transmitting a plurality of pixel controlling signals and a plurality of

touch-detecting signals”.

As the above mentioned, Colgan1, Mai and Furuhashi do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed
5 color filter, the claimed signal connecting contacts and the claimed protrusion.

Further referring to Colgan2, Colgan2 does not teach that

- (1) the top substrate 24 has at least one protrusion jutting out the bottom substrate
22; and
10 (2) the top substrate 24 has a plurality of signal connecting contacts disposed on
the protrusion of the second substrate 24.

Therefore, the combination of Colgan1’s disclosure, Mai’s disclosure,
Furuhashi’s disclosure and Colgan2’s disclosure does not disclose all the limitations of
15 the structure in claim 13. Therefore, claim 13 should be allowable in consideration of
35 U.S.C. 103(a). Since claim 14 is dependent upon claim 13, it should be allowable if
claim 13 is allowable. Reconsideration of claim 14 is respectfully requested.

7. Rejection of claims 20-27 under 35 U.S.C. 103(a):

20 Claims 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Colgan1 in view of Ikeda et al. and further in view of Furuhashi for reasons of record,
as recited on pages 13-15 of the above-indicated Office action.

Response:

25 Claim 20 has the limitation of “the second substrate further having at least one
protrusion jutting out the first substrate and a plurality of signal connecting contacts
disposed on the protrusion of the second substrate, the second substrate and the
protrusion being integral, the signal connecting contacts connecting to the detecting
circuit for transmitting a plurality of pixel controlling signals and a plurality of
30 touch-detecting signals”, and the limitation of “a first substrate having at least one

pixel controlling circuit, and a color filter formed on the pixel controlling circuit... a liquid crystal layer filled between the space formed by the first substrate and the second substrate". As shown in paragraph [0015] and Figs. 2-3 of the present application, the pixel controlling circuit 218 and color filter 208 are fabricated on the same substrate by the color filter on array process (COA) technique. Therefore, more surface space is reserved for other application on the top substrate 204.

In other words, the claimed input-sensor-integrated liquid crystal display panel can be an in-cell type touch-detecting display panel, which integrates the touch-detecting circuit into a second substrate **of the LCD panel**, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate.

As the above mentioned, the touch panel 100 and the liquid crystal display unit 300 are individual devices attached together according to paragraph [0099] and Figs. 1-2 of Furuhashi's disclosure, and the protuberating output printed board 12 is an additionally attached structure as shown in Figs. 2-4 and 6-8. In other words, Furuhashi does not teach an in-cell type touch-detecting display panel, which integrates the touch-detecting circuit into a second substrate **of the LCD panel**, and Furuhashi does not teach an integral protrusion of the second substrate of the LCD panel, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate. Therefore, Colgan1 and Furuhashi do not teach that the claimed second substrate includes the claimed touch-detecting circuit, the claimed color filter, the claimed signal connecting contacts and the claimed protrusion.

The protrusion of the second substrate is especially included in the present application for such an input-sensor-integrated liquid crystal display panel and for installing signal connecting contacts to transmit pixel controlling signals and touch-detecting signals, as described in claim 20. On the contrary, Colgan1 or Furuhashi dose not teach or suggest such a second substrate of the LCD panel, where

the liquid crystal layer fills between the space formed by the first substrate and the second substrate.

5 Since the upper substrate 1 of Furuhashi's disclosure is obviously not the second substrate, where the liquid crystal layer fills between the space formed by the first substrate and the second substrate in the present application, applicants believe that it is not obvious to a person having ordinary skill in the art to consider the upper substrate 1 of Furuhashi's disclosure as the second substrate of the present application.

10 On the other hand, as shown in the drawings of Colgan1's disclosure, *the color filter plate 18* taught by **Colgan1** does not *have a protrusion jutting out the TFT array plate 8*. Therefore, the signal connections are still problems for Colgan1, and there is obvious no protrusions of the upper substrate 18 to installation of signal connecting contacts in Colgan1's disclosure.

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Further referring to Ikeda, Ikeda does not teach that

(1) the upper substrate 4 has at least one protrusion jutting out the lower substrate 3;

20 (2) the top substrate 4 has a plurality of signal connecting contacts disposed on the protrusion of the second substrate 4; and

(3) the signal connecting contacts connecting to the detecting circuit for transmitting a plurality of pixel controlling signals and a plurality of **touch-detecting signals**.

25 The combination of Colgan1's disclosure, Ikeda's disclosure and Furuhashi's disclosure does not disclose all the limitations of the structure in claim 20. Therefore, claim 20 should be allowable in consideration of 35 U.S.C. 103(a). Reconsideration of claim 20 is respectfully requested.

30 Since claims 21-27 are dependent upon claim 20, they should be allowable if

claim 20 is allowable. Reconsideration of claims 21-27 is respectfully requested.

5 Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

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